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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* TOMOHISA TENRA  
and TAKAO FUJIMOTO

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Appeal 2009-002827  
Application 10/537,298  
Technology Center 1700

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Decided:<sup>1</sup> June 4, 2009

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Before CATHERINE Q. TIMM, MARK NAGUMO, and  
KAREN M. HASTINGS, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 2, 8-14, 18, and 19. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

#### STATEMENT OF THE CASE

The invention relates to a vacuum heat insulator having a porous core member covered with an enveloping member having heat seal layers that are heated and fused together along the shape of the core member (Spec. 4, ll. 20-25). Claims 2, 8, and 10 are illustrative of the subject matter on appeal:

2. A vacuum heat insulator comprising a gas barrier enveloping member having a heat seal layer, and a flat core member,

wherein said core member is evacuated and sealed within the enveloping member, said enveloping member having mutually facing heat seal layers,

wherein the enveloping member is heated and pressed in a portion where said core member is present within the enveloping member, and at portions of said enveloping member where said core member is not present within the enveloping member, and

wherein the portions of said heat seal layer where said core member is not present within the enveloping member are closely attached to each other and heated and fused so as to be along the core member shape at the border between the portion where the core member is present within the enveloping member and the portion where the core member is not present.

8. The vacuum heat insulator of claim 2, wherein through-holes are formed in the thickness direction of the core member, and

wherein, the enveloping member is heated and pressed in portions where the core member is present, and

wherein said heat seal layers are heated and fused over said through-holes and along the shape of said through-holes.

10. The vacuum heat insulator of claim 9, wherein holes are not formed in the enveloping member in the area of said through-holes of the core members.

The Examiner relies on the following prior art references to show unpatentability:

Miyoshi et al. (“Miyoshi”) <sup>2</sup>	JP 08-303686	Nov. 22, 1996
Tanimoto et al. (“Tanimoto”) <sup>3</sup>	JP 10-110887 <sup>4</sup>	Apr. 22, 1998
Stroobants	US 6,322,743 B1	Nov. 27, 2001

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<sup>2</sup> We refer to this reference, which the Examiner refers to as “Motoyuki,” as “Miyoshi,” the first named inventor’s surname.

<sup>3</sup> We refer to this reference, which the Examiner refers to as “Yasuaki,” as “Tanimoto,” the first named inventor’s surname.

<sup>4</sup> For both Miyoshi and Tanimoto, the Examiner’s final rejection relies on the English-language Abstracts and the Figures of the original Japanese-language publications made part of the record by Appellants as part of an Information Disclosure Statement filed June 2, 2005. With the Answer, the Examiner provided a translation of Miyoshi prepared for the USPTO by Schreiber Translations, Inc. (PTO 08-2843 March 2008) and a translation of Tanimoto prepared for the USPTO by the McElroy Translation Company (PTO 08-2870 March 2008). Appellants rely upon these translations in support of their arguments in the Reply Brief (*see, e.g.*, Reply Br. 2). As Appellants have reviewed and considered the translations, we consider the translations as well as the English Abstract and Figures from the Japanese-language documents.

The Examiner maintains the following rejections:<sup>5</sup>

1. Claims 2, 11, 13, 14, and 18 rejected under 35 U.S.C. § 102(b) as anticipated by Tanimoto;
2. Claims 8-10 rejected under 35 U.S.C. § 103(a) as obvious over Tanimoto in view of Miyoshi;
3. Claim 12 rejected under 35 U.S.C. § 103(a) as obvious over Tanimoto in view of Stroobants; and
4. Claim 19 rejected under 35 U.S.C. § 103(a) as obvious over Tanimoto.

### I. FIRST REJECTION

For the first rejection, based on anticipation by Tanimoto, Appellants focus their arguments on claim 2 and do not separately argue claims 11, 13, 14, and 18 (App. Br. 3-6). Accordingly, we select independent claim 2 as the representative claim for this group. *See* 37 C.F.R. § 41.37(c)(1)(vii) (“When multiple claims subject to the same ground of rejection are argued as a group by appellant, the Board may select a single claim from the group of claims that are argued together to decide the appeal with respect to the group of claims as to the ground of rejection on the basis of the selected claim alone.”).

#### A. ISSUE ON APPEAL

Appellants initially contend that Tanimoto does not disclose areas “where said core member is not present within the enveloping member” and further does not disclose any area where portions of “the heat seal layers are

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<sup>5</sup> In the Examiner’s Answer, the Examiner withdraws the rejections relying on Stroobants as the primary reference that were recited in the Final Office Action, considering them cumulative of the maintained rejections recited herein. (Ans. 3).

closely attached to each other and heated and fused so as to be along the core member shape at the border between the portion where the core member is present within the enveloping member and the portion where the core member is not present” as recited in claim 2 (Br. 4-6; Claim 2).

According to Appellants: (a) Tanimoto’s core material 2 does not include any through hole (such as through hole 36 shown in Appellants’ Figure 8) or any other portion in which the core material is not present; (b) Tanimoto does not describe how the portions between the core material and the discontinuous portions of core material are thermally fused; (c) it was not known at the time of the filing of Tanimoto to heat seal layers *where the core member is not present*; (d) Tanimoto can achieve desired “independent vacuum parts” with heat seal parts smaller than that of the present application; and (e) in Tanimoto, heating and fusing of the heat seal layer “do not need to be performed at the border between the portion where the core member is present . . . and the portion where the core member is not present” (Br. 4-6; Reply Br. 2-3).

The Examiner contends: (a) that the heating and pressing limitations argued by the Appellants are process limitations that do not structurally distinguish the claimed invention over that of Tanimoto; (b) that Figures 1 and 2 of Tanimoto disclose portions of the heat seal layer where the core is not present, namely the areas between the core members 2; (c) that Figures 1 and 2 of Tanimoto show heat seal layers 3 closely attached together between the core members 2 and along the edges of the core members 2, so as to actually abut the core members 2; and (d) that Appellants’ Figure 8 is not representative of the broad scope of claim 2 (Ans. 7-8).

Accordingly, the dispositive issue for this appealed rejection is: have the Appellants shown that the Examiner reversibly erred in finding that Tanimoto describes a gas barrier enveloping member configured around a core member and in areas where the core member is not present as required by claim 2?

**B. FACTUAL FINDINGS**

The following Findings of Fact (FF) are relevant to deciding the above identified issue on appeal:

1. Appellants' Specification discloses and depicts various embodiments of vacuum heat insulators with cores of various configurations (Spec. 11-65; e.g., Fig. 1, showing cores 11; Fig. 7, showing core 31a; Fig. 8, showing core 31b; Fig. 9 showing cores 41).

2. Appellants' Embodiment 1 is directed to a multi-core vacuum heat insulator with sixteen individual core members 11 disposed in a lattice layout. As shown in Figures 1 and 2, "the enveloping member 12 of vacuum heat insulator 10 is heated and fused between the core member 11 and the adjacent other core member 11" (Spec. 11, l. 1-12, l. 2). In other words, in Figures 1 and 2, the enveloping member is heated and fused everywhere where a core member is not present.

Figures 1 and 2 of Appellants' Specification are reproduced below.

FIG. 1

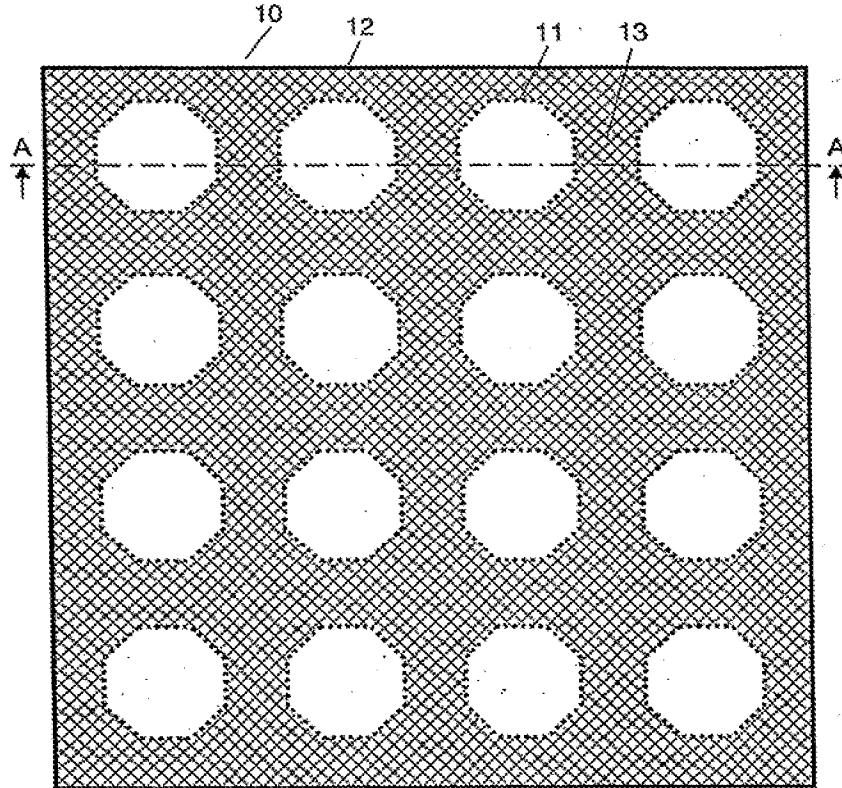


FIG. 2

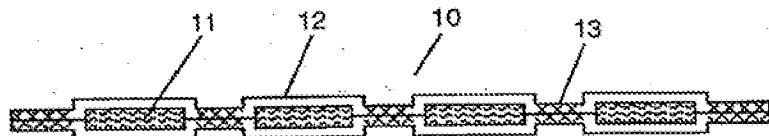


Figure 1 depicts a plan view of a multi-core vacuum heat insulator 10.

Figure 2 depicts a sectional view taken along line A-A in Figure 1 (Spec. 11, ll. 2-3).

3. Appellants' Specification states that Figures 1 and 2 show heat seal part 13 formed "along the core member shape" (Spec. 12, ll. 4-5).

4. Appellants' Specification discloses an alternative embodiment (Embodiment 3) in which a core member 31b includes through-holes 36 as depicted in the Figure 8 (*See Spec. 17, ll. 13-19, l. 12*).

Figure 8 of Appellants' Specification is reproduced below.

**FIG.8**

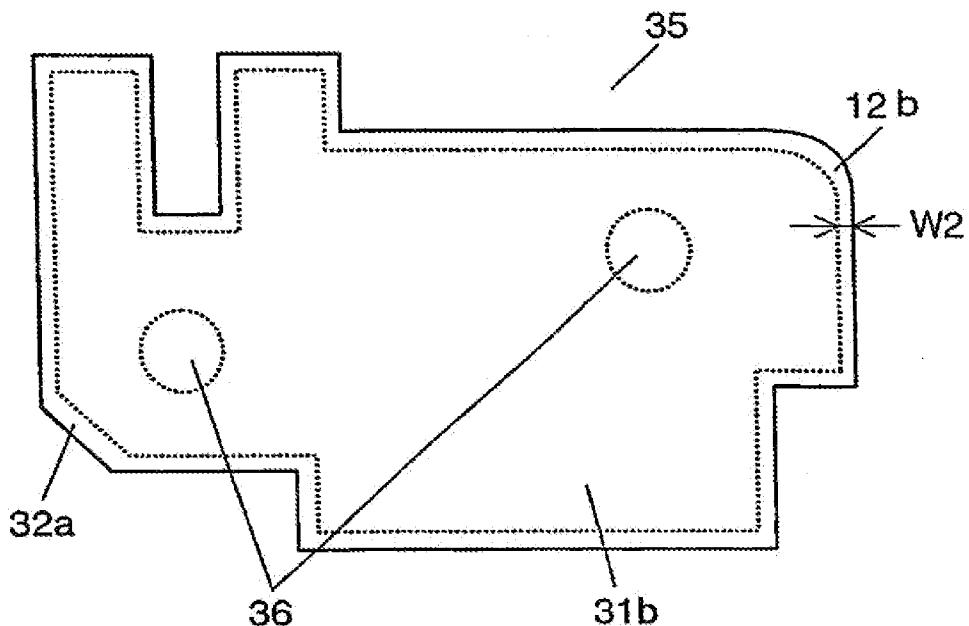


Figure 8 depicts a plan view of a vacuum heat insulator (Spec. 17, ll. 6-7).

5. Figure 1 of Tanimoto depicts a vacuum insulation body 1 with individual cores 2 enveloped by covering material 3. (Tanimoto, translation ¶ 45). The structure is similar to Appellants' Embodiment 1 shown in Figure 2 of Appellants' Specification (Tanimoto, Figure 1; Spec. Figure 2).

Figure 1 of Tanimoto is reproduced below.

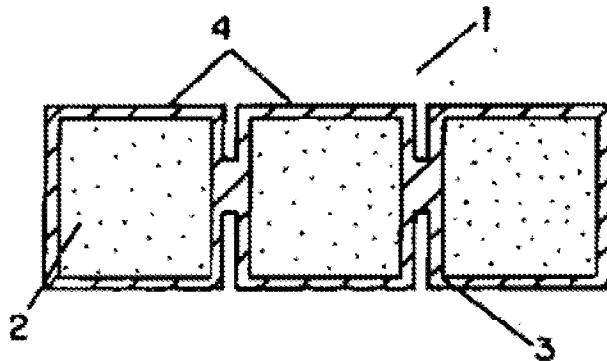


FIGURE 1

Figure 1 depicts a cross section of a vacuum heat insulation body (Tanimoto, translation ¶ 99).

6. Tanimoto teaches that the outer covering material 3 is thermally fused or welded at the uncontinuous, or discontinuous, part of the core materials 2 (Tanimoto, Abstract; Figure 1; translation ¶ 45).

7. Tanimoto teaches that a covering material 3 is thermally welded closely around core materials 2 (Tanimoto, Abstract, Figure 1).

8. Tanimoto teaches that the seal between the core material 2 is sufficient to form independent vacuum parts, such that if the covering material 3 is ruptured over one core material portion, the other vacuum sealed core materials portions are not affected (Tanimoto, Abstract; translation ¶¶ 23, 29, 46, and 87).

#### C. PRINCIPLES OF LAW

Much of our decision rests on what is meant by the language recited in claim 2. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1567-1568 (Fed. Cir. 1987) (“Analysis begins with a key legal question - *what* is the invention *claimed*? . . . Claim interpretation . . . will normally control the remainder of the decisional process.”) (footnote omitted).

The claims, not the specification, measure the protected patent right to exclude others. *Novo Nordisk of N. Am., Inc. v. Genentech, Inc.*, 77 F.3d 1364, 1369 (Fed. Cir. 1996). Claim interpretation begins with the language of the claim itself. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (“To begin with, the context in which a term is used in the asserted claim can be highly instructive.”).

Further, the claim language must be given its broadest reasonable meaning. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997) (“[A]s an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification.”). “Construing claims broadly during prosecution is not unfair to the applicant . . . , because the applicant has the opportunity to amend the claims to obtain more precise claim coverage.” *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Our reviewing court has repeatedly emphasized that it is not appropriate to read desired embodiments from the specification into the claims. *Phillips*, 415 F.3d at 1323 (“[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”).

“To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently.” *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). “A single reference must describe the claimed invention with sufficient precision and detail to

establish that the subject matter existed in the prior art.” *Verve LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1120 (Fed. Cir. 2002).

“[I]t is the patentability of the *product* claimed and *not* of the recited process steps which must be established.” *In re Brown*, 459 F.2d 531, 535 (CCPA 1972). “[E]ven though *product-by-process claims are limited by and defined by the process*, determination of patentability is based on the product itself.” *In re Thorpe*, 777 F.2d 695, 697 (Fed.Cir.1985), *cited with approval in Abbott Labs. v. Sandoz, Inc.*, 2009 WL 13714410, \*8 (Fed. Cir. 2009) (emphasis added by the court).

#### D. ANALYSIS

The language of claim 2 does not limit the scope of vacuum heat insulators to those that contain one core member. In other words, multicore structures such as the one shown in Figure 1 are covered by the claim. Thus, the phrase “where said core member is not present,” as recited in claim 2, reads broadly on the area between separate core members that are enveloped by the same materials. Appellants’ Specification does not give a more limited meaning to, nor does it even use, the phrase “where the core member is not present.” Appellants have not provided any convincing reason based on the record to limit the claims to require the locations “where said core member is not present” to the through-holes depicted in Figure 8. (FF 4.) Rather, Appellants’ Specification describes various embodiments of vacuum heat insulation bodies including embodiments with individual cores such that an enveloping member is heated and pressed at portions “where said core member is not present” including the embodiment shown in Figures 1-2 (FF 1-2). The claim language does not exclude the embodiment described in Figures 1-2 of the Specification. Accordingly, this language encompasses

the areas of heat seal parts 13 between separate core members 11 where the enveloping material 12 is sealed, as shown in Figures 1 and 2 (i.e., the enveloping material is sealed where the core is not present) (FF 4).

Claim 2 also recites “wherein the portions of said heat seal layer where said core member is not present within the enveloping member are closely attached to each other and heated and fused so as to be along the core member shape at the border between the portion where the core member is present within the enveloping member and the portion where the core member is not present.” (Claim 2). In giving “the border” the broadest reasonable interpretation, “the border” is the region along the periphery of a core member. This interpretation is supported by Appellants’ Specification, which indicates that Figures 1 and 2 demonstrate the enveloping member fused “along the core member shape” and which shows the enveloping member sealed along a periphery of the core member (FF 4).

Figure 1 of Tanimoto, similarly to the cross section shown in Figure 2 of Appellants’ Specification, depicts a covering material 3 enveloping core material 2 (FF 5). Tanimoto teaches and illustrates that covering material 3 is thermally fused (i.e., sealed) in the discontinuous parts of core material 2 (FF 6). In other words, the covering material 3 (enveloping member) is fused together where the core material 2 (core member) is not present. Additionally, in Tanimoto, the covering material 3 is thermally welded closely around core materials 2 (FF 7). Figure 1 of Tanimoto illustrates that the covering material is sealed along the shape of the periphery (i.e., the border) of the core material 2 (*See Figure 1*).

Further, we agree with the Examiner that the phrases “heated and pressed” and “heated and fused” are process limitations. It is reasonable to

conclude, based upon the evidence of record, that Tanimoto's process of thermal fusing or welding to form independent vacuum parts, each not affected by rupturing of another, results in the same or substantially the same structure as Appellants' recited heating and pressing process (FF 5-8). Appellants have not shown that the claimed vacuum heat insulator is structurally distinguishable over a vacuum heat insulator which may be sealed by an alternative method, if the method of Tanimoto is, indeed, different.

Appellants' remaining arguments are unpersuasive and provide no convincing reasoning establishing Examiner error. Accordingly, Appellants have not shown that the Examiner reversibly erred in finding that Tanimoto describes a gas barrier enveloping member configured around a core member and in areas where the core member is not present as required by claim 2.

## II. SECOND REJECTION

With respect to the Examiner's rejection of claims 8-10 as obvious over Tanimoto and Miyoshi, Appellants present separate arguments for claim 8 and claim 10. Accordingly, we select claims 8 and 10 to represent this group.

### A. ISSUE ON APPEAL

Since Miyoshi teaches that a pipe may be inserted into through-hole 31, Appellants contend, with respect to claim 8: (a) that one of ordinary skill in the art would not have heat sealed layers "heated and fused over said through-holes and along the shape of said through-holes," as recited in claim 8 (Br. 9; Reply Br. 4) and (b) that inserting a tube through a hole teaches away from heating and fusing a heat seal layer over a through-hole (Reply

Br. 4). With respect to claim 10, Appellants further contend (c) that Miyoshi does not teach that “holes are not formed in the enveloping member in the area of said through-holes of the core member,” as recited in claim 10 (Br. 9).

The Examiner construes claim 8 broadly and suggests that the enveloping member need not be sealed over the entire cross-sectional extent of the through-hole 31 (Ans. 8). The Examiner also contends that Miyoshi teaches that a cut or slit may be made to form through-hole 31 after the enveloping material is sealed, such that after sealing, but before the enveloping material is cut or slit for passage of a tube, the enveloping material does not have a hole and meets the claim limitation (Ans. 8-9).

The dispositive issue for the appeal of this obviousness rejection is: have the Appellants shown that the Examiner reversibly erred in determining that the limitations of claim 8 and 10 are obvious to one of ordinary skill in the art over the teachings of Tanimoto and Miyoshi because Miyoshi teaches inserting a pipe into through-hole 31?

#### B. FACTUAL FINDINGS

The following additional Findings of Fact are relevant to deciding the above identified issue on appeal:

9. Appellants’ Specification states that the area where enveloping member 12b is sealed at through-hole 36 in Figure 8 “can be fixed by screws or the like” such that “[t]he vacuum heat insulator 35 can be easily fixed and disposed” with excellent mounting performance (Spec. 18, ll. 14-19).

10. Miyoshi teaches that the seal part A(24) may be formed along the inner periphery of the through-hole part 31 or may also be formed over the entire surface in the through hole part 31 as long as it is continuously

formed along the inner peripheral part of the through hole part (Miyoshi, translation ¶ 34).

Figures 3 and 4 of Miyoshi are reproduced below.

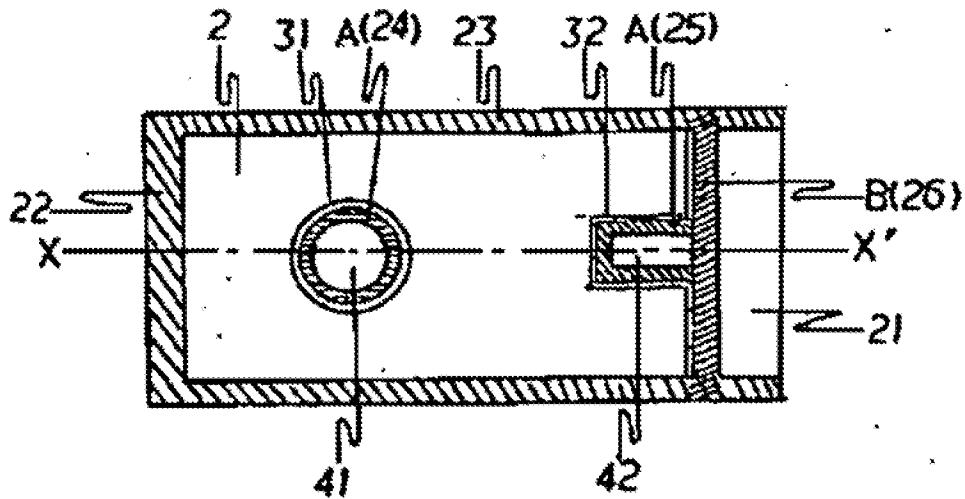


FIGURE 3

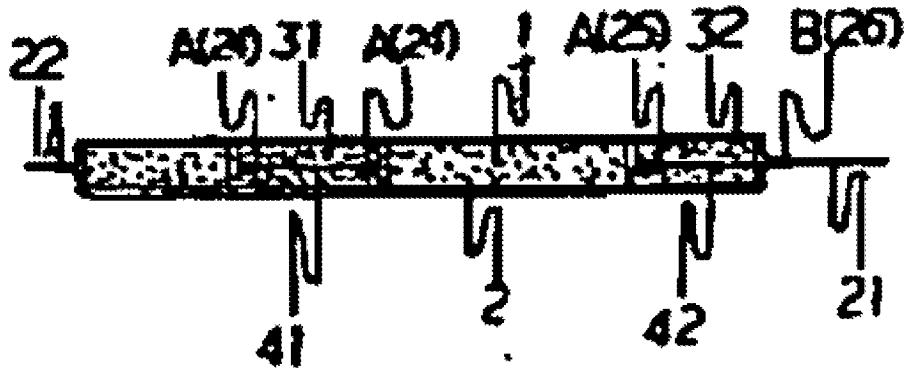


FIGURE 4

Figure 3 depicts a schematic plan view showing an example of a vacuum insulation panel. Figure 4 depicts a schematic cross section taken along line X-X' of Figure 3.

11. Miyoshi teaches that, “[i]n forming the through hole in the through hole part (31), the inside (41) of the seal part A (24) may be cut out, or a slit may be formed in it” in order to pass wiring, pipes, equipment, etc., or to install the members around a door hinge, etc. (Miyoshi, translation ¶¶ 33 and 35).

### C. PRINCIPLES OF LAW

“On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of prima facie obviousness or by rebutting the prima facie case with evidence of secondary indicia of nonobviousness.”

*In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (emphasis omitted).

A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including non-preferred embodiments. *Merck & Co v. Biocraft Labs.*, 874 F.2d 804, 807 (Fed. Cir. 1989). Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments.

*In re Susi*, 440 F.2d 442, 446 n.3 (CCPA 1971).

### D. ANALYSIS

Appellants’ Specification states that a screw (and thus a hole) can be placed in the area of through-hole 36 to affix the vacuum heat insulator, which would inevitably provide a hole in the enveloping member where the screw is inserted (FF 9). Accordingly, claim 8 and claim 10 only require the enveloping member to be present “over said through-hole,” as recited in claim 8, and “holes are not formed in the enveloping member,” as required by claim 10, at some point in time.

Miyoshi clearly teaches that a seal A (24) may be continuously present in the area of a through-hole 31 in the core material (FF 10). Miyoshi teaches that a cut out or slit “may be” formed in the inside 41 of seal area A (24), thus indicating that hole in the covering layer is preferred but not required (FF 11). Thus, one of ordinary skill in the art would have found that the teachings of Miyoshi are broad and do not necessarily require a hole to be present.

Moreover, we agree with the Examiner that, prior to cutting out a hole or slit in the inside 41 of seal A (24), Miyoshi teaches a enveloping member 2 that is sealed over a through-hole 31, as recited in claim 8, and where holes are not formed in the enveloping member in the area of through-hole 31, as recited in claim 10.

Accordingly, Appellants have not shown that the Examiner reversibly erred in determining that the limitations of claims 8 and 10 are obvious to one of ordinary skill in the art over the teachings of Tanimoto and Miyoshi because Miyoshi teaches inserting a pipe into through-hole 31.

### III. THIRD AND FOURTH REJECTIONS

With respect to claims 12 and 19, Appellants present no separate arguments over the arguments presented above with respect to claim 2 (*See* Br. 8 and 10; Reply Br. 4) Accordingly, Appellants have not shown that the Examiner erred with respect to the rejections of claims 12 and 19, for the same reasons presented above with respect to claim 2.

### IV. CONCLUSION

For the reasons presented above, we sustain the following Examiner's rejections:

1. Claims 2, 11, 13, 14, and 18 rejected under 35 U.S.C. § 102(b) as anticipated by Tanimoto; and
2. Claims 8-10 rejected under 35 U.S.C. § 103(a) as obvious over Tanimoto in view of Miyoshi;
3. Claim 12 rejected under 35 U.S.C. § 103(a) as obvious over Tanimoto in view of Stroobants;

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4. Claim 19 rejected under 35 U.S.C. § 103(a) as obvious over Tanimoto.

#### V. DECISION

We affirm the Examiner's decision.

#### VI. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal maybe extended under 37 C.F.R. § 1.136(a)(1)(v)(2008).

**AFFIRMED**

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